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MISCELLANEOUS AGRICULTURAL SUPPLIES AND SMALL EQUIPMENT SALES AND SERVICE. AGRICULTURAL SUPPLY - SALES AND SERVICE OCCUPATIONS, MODULE NUMBER 12.

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THE PURPOSE OF THIS GUIDE IS TO ASSIST TEACHERS IN PLANNING A UNIT ON THE SALE AND SERVICE OF MISCELLANEOUS EQUIPMENT AND SUPPLIES FOR HIGH SCHOOL STUDENTS PREPARING FOR AGRICULTURAL SUPPLY OCCUPATIONS. ONE OF A SERIES OF MODULES IN AGRICULTURAL SUPPLY, IT WAS DEVELOPED BY A NATIONAL TASK FORCE ON THE BASIS OF STATE STUDIES. SECTIONS ARE (1) RANGE OF SUPPLIES AND EQUIPMENT CARRIED BY AGRICULTURAL SUPPLY BUSINESSES, (2) SPECIFIC CHARACTERISTICS OF SELECTED MISCELLANEOUS EQUIPMENT AND SUPPLIES, AND (3) SERVICES PROVIDED WITH MISCELLANEOUS EQUIPMENT AND SUPPLIES. SUGGESTIONS FOR INTRODUCING THE MODULE AND EVALUATING EDUCATIONAL OUTCOMES AND SOURCES OF INSTRUCTIONAL MATERIALS ARE GIVEN. EACH SECTION CONTAINS SUBJECT MATTER CONTENT, TEACHING-LEARNING ACTIVITIES, AND INSTRUCTIONAL AIDS AND REFERENCES. TEACHERS SHOULD HAVE A BACKGROUND AND STUDENTS AN OCCUPATIONAL GOAL IN AGRICULTURAL SUPPLY. THIS DOCUMENT IS AVAILABLE FOR A LIMITED PERIOD AS PART OF A SET (VT 000 632 - 000 644) FOR $7.00 FROM THE CENTER FOR VOCATIONAL AND TECHNICAL EDUCATION, THE OHIO STATE UNIVERSITY, 980 KINNEAR ROAD, COLUMBUS, OHIO 43212. (JM)

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MISCELLANEOUS AGRICULTURAL SUPPLIES AND SMALL EQUIPMENT SALES AND SERVICE

One of Twelve Modules in the Course Preparing for Entry in

AGRICULTURAL SUPPLY - SALES AND SERVICE OCCUPATIONS

Module No. 12

The Center for Research and Leadership Development

In Vocational and Technical Education

The Ohio State University
980 Kinnear Road
Columbus, Ohio, 43212

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MEMORANDUM

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DATE: August 7, 1967

RE: (Author, Title, Publisher, Date) Module No. 12, "Miscellaneous Agricultural Supplies and Small Equipment - Sales and Service," The Center for Vocational and Technical Education, August, 1965.

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Users of Material Teachers

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Time Allotment Estimated time listed in module. (P)

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Necessary x
Desirable
(Check Which)

Describe Suggested references given in module. (P)

Source (agency)
(address)

MISCELLANEOUS AGRICULTURAL SUPPLIES AND SMALL EQUIPMENT SALES AND SERVICE

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MISCELLANEOUS AGRICULTURAL SUPPLIES AND SMALL EQUIPMENT SALES AND SERVICE

Major Teaching Objective

To develop an understanding concerning the merchandising and service aspects of "miscellaneous" supplies and small equipment handled by agricultural supply centers.

Suggested Time Allotments

At school		
Class instruction	12 hours	
Laboratory experience	8 hours	
Total at school		20 hours
Occupational experience		20 hours
Total for module		40 hours

Setting for the Module

The objective of this module is to develop an understanding of retail sales and service work associated with miscellaneous supplies and small equipment sold in agricultural businesses. Persons training for employment in general farm supply stores need product knowledge for the miscellaneous items carried by such businesses. This module is not intended to develop specialized sales or service personnel.

Three competencies are inclued in the module. They are:

1. To become familiar with the wide range of supplies and small equipment which may be carried by the agricultural supply business

2. To know specific characteristics of selected miscellaneous small equipment and supplies useful to a salesperson.

3. To know what services can be provided pertaining to miscellaneous supplies and small equipment handled by an agricultural supply business

The modern farm supply store or service center handles many lines of products and offers almost any service needed by a farmer or rural resident. Not all phases of a farm supply business are of equal magnitude or contribute equally to the volume of business or net profit. An analysis of yearly sales may reveal that more than 50 percent of the business transacted is in one or two major lines such as feed or fertilizer. Many minor lines will make up the remainder. In some cases, a minor line will show no profit at all, or if a profit is made, the volume of business is so small that the total effect on the yearly business is insignificant.

Separate modules could be developed to take care of all minor product lines found in an agricultural supply store but would be somewhat meaningless since specialized sales or service personnel are not usually hired to take care of each line. For example, if a garden center added pet food and supplies to their major lines of seeds and plant materials, they might expect the salesperson who handles garden seed to also take care of the pet foods. If lawn mowers were added to the farm supply business, a specialized person might be necessary to handle the service while other salespersons took care of the selling. However, if this firm added a line of chain saws, the man who services the lawn mowers would probably take care of the chain saw work.

Some items which have been included in the miscellaneous group may be worthy of separate development to meet local situations. This is particularly true for hardware and paints when a number of students are obtaining cooperative work experience and are likely to be employed in these areas upon completing the course.

A farm supply business with major lines in feed, seed, fertilizers, chemicals and petroleum would need one or more persons specialized in these lines. Sales and service personnel, although specialized in one line, may also work in other areas when necessary. This is particularly true with minor miscellaneous supplies or equipment where a salesperson's general training enables him to serve the customer either because little specialized product knowledge is necessary or because the volume of business is so small that a person having specialized product knowledge is not justified.

A single job description for the retail sales or service person who might handle miscellaneous supplies does not exist. Career briefs found in the Handbook of Agricultural Occupations* for Country Store Clerk, Hardware and Equipment Store Employee, Farm Cooperative Store Employee, and Garden Center Employee are applicable in some degree to the salesperson who would handle the miscellaneous supplies.

In urban areas, the preparation for sales work in connection with the miscellaneous supplies might be handled through programs of distributive education. However, for farm supply stores and similar businesses, the rural background and familiarity with agriculture developed by students in the first two years of vocational agriculture will make it easier for a retail salesperson to handle the variety of items included under "miscellaneous" supplies or equipment.

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*Hoover, Norman K. Handbook of Agricultural Occupations. Danville, Illinois: The Interstate Printers and Publishers.

Suggestions for Introducing the Module

1. Bring in several small "miscellaneous" items and have the students attempt to sell them to the teacher. Do they know enough to do so? Examples might include: (1) irrigation siphons, (2) ½" manila rope, (3) polyethylene plastic pipe, (4) a rototiller, (5) a roll of barbed wire fencing, (6) a fence charger, (7) veterinary blood stopper, (8) worming pills, (9) an emasculator, and (10) a block of mineral salt.

2. Show the class a small, Barnes type, calf dehorner. Ask them what type of dehorner they would recommend that a customer buy for use on "long" yearlings.

3. Ask the class to name items sold besides feed, seed, and fertilizer in local farm supply stores in the community. Point out that product knowledge for each of these items is needed by the salesperson if he is to be successful in selling these items. Then point out that one person in a farm supply store or garden center may need to know how to sell and service more than one "line" of equipment or supplies if he is to be successful.

4. Much of the presentation in the introduction to Module No. 8 may be reviewed by the teacher with the class when introducing this module.

Competencies to be Developed

I. To become familiar with the wide range of supplies and small equipment which may be carried by the agricultural supply business

Teacher Preparation

Subject Matter Content

There apparently is no limit to the number of miscellaneous supplies which one agricultural supply firm may handle. Visits to several such businesses makes a person aware of the variety and number of such items. When an establishment is re-visited after several years, a person can observe additions in both number of products and variety of items offered. However, from the practical point of view, the decision to continue an existing line or add a new one is usually made for one or more of the following reasons.

1. The opportunity to make a greater profit exists.
2. Customers demand it.
3. It will meet competition.

Other questions which a business firm answer before making a decision on adding an additional line include:

1. Is sufficient space available at reasonable cost to handle the product?

2. Can the new line be handled by existing personnel or will additional employees be needed?

3. Can present employees be given special training if necessary?

4. Will service have to be provided if a new line is handled? If so, will it be self-supporting?

5. Will additional operating capital be required? Can initial stock be secured on "open account" or handled on a commission basis?

6. What advertising will be necessary?

Many of these factors will be evaluated on the amount of "mark up" and the anticipated volume of sales. Product lines which are "high profit" items and which require little space and no service, yet have great customer appeal and need little advertising, are easy to add. This is especially true if these lines can be handled on a commission basis where unsold goods can be returned after a reasonable period of time. No assurance exists as to how many units can be sold. The high profit realized on the early sales may evaporate as speciality items become overage and must be closed out at a loss. In contrast, product lines which have to be sold on a "low profit" margin largely because of competition, may be better money makers if the demand is steady and a sizeable volume is sold over a period of time.

Although patterns vary across the country, the following are common lines of miscellaneous products found either in agricultural supply or garden centers.

1. Veterinary supplies and equipment

   Catalogs such as those published by Nasco; Sears, Roebuck, and Company; Montgomery Ward; or the Franklin Company will provide detailed lists of such supplies. The following are among those more commonly called for by customers:

   a. Thermometers

   b. Veterinary syringes

c. Balling guns

d. Hose syringes

e. Trocars

f. Mouth speculums

g. Calf pullers

h. Mastitis control and detection equipment

i. Stockmen's knives

j. Hardware disease magnets

k. Castrating equipment and supplies

l. Dehorning equipment and supplies

m. Animal health products such as:

1) Phenothiazine boluses
2) Piperazine wormer
3) Screw worm medicine
4) Scour medicine
5) Sulfa drugs
6) Penicillin preparation
7) Pinkeye treatments
8) Udder ointments
9) Milk fever remedies
10) Blackleg bacterin
11) Mange, lice and tick treatments
12) Fly killers
13) Bloodstop powder
14) Bloat remedy
15) Drenching kits

2. Large animal supplies and equipment

Among such items commonly sold in agricultural supply businesses are those listed below.

a. Neck chains and tags

b. Ear tags

c. Tattoo markers

d. Branding irons

e. Cattle nose leads and neck straps

f. Leather and rope halters

g. Grooming supplies such as curry combs, brushes, soaps, polishes, coat dressings, and clippers

h. Horn weights and horn trainers

i. Hoof trimmers

j. Horsebridles and bits

k. Saddles and related tack

l. Horse shoeing supplies and equipment

m. Hog ringers

n. Feed carts

o. Calf weaners

p. Electric cow prods

q. Milking supplies and equipment

1) Milk filters
2) Milker inflations
3) Cleaning supplies such as scouring sponges, toweling, brushes, and pipeline cleaners
4) Pails
5) Dairy scales
6) Milk thermometers

r. Hobbles

s. Nose twitches

t. Creep feeders

u. Farrowing crates

v. Hog troughs

Some of the larger equipment sold through supply centers would be beyond the technical ability of the salesperson just entering the business. Examples of such items sold would be automated feeding and watering equipment, slatted floors, farrowing stalls, gutter cleaners, bulk tanks, and pipeline milker systems.

3. Poultry supplies

The following are commonly sold over the counter in farm supply stores.

a. Egg candlers

b. Egg graders

c. Egg scales

d. Egg baskets

e. Egg washers and washing compounds

f. Chick hovers and brooders

g. Small incubators

h. Wing bands

i. Electric debeakers

j. Poultry scales

k. Poultry waterers

l. Poultry feeders

m. Poultry nesting units

Larger equipment, which must be adapted to individual farm situations would probably be beyond the capacity of the retail salesperson without special training. Examples would include caged layer systems, fogging systems, and automated feeding systems.

4. Agricultural hardware

Some hardware items are primarily used on the farm, ranch, or horticultural operation and thus are found in many agricultural supply businesses. They include

a. Fence stretchers

b. Wire pliers

c. Wire splicers

d. Gate irons

e. Mower repair blocks

f. Portable air tanks

g. Feed chopper and mowing machine knives

h. Shear bars and mower guards

i. Husking hooks and corn knives

j. Grassboards

k. Soil sampling augers and tubes

l. Soil testing kits

m. Seed cleaners and graders

n. Hand sprayers, dusters, and their repair parts

o. Grass, tree, and hedge shears or trimmers

p. Pruning shears and lopping shears

q. Pruning saws and pole pruners

r. Lawn and garden rakes, hoes, and trowels

s. Root feeders and waterers

t. Budding, grafting, and pruning knives

u. Brush hooks, mattocks and grab hoes

v. Axes, sledges, and saw wedges

w. Rain or sprinkler gauges

x. Home pasteurizers

y. Shallow and deep well pumps and replacement parts

z. Butchering supplies such as hog scrapers, butcher's saws, meat pumps, and skinning knives

aa. Irrigation siphons, sprinkler heads and sprinkler systems

bb. Stock tank heaters

cc. Animal traps

dd. Corn cribs and cribbing materials

ee. Farm levels and transits

3. Basic hardware

Other hardware items often sold by agricultural supply centers are also found in the regular hardware store. The salesperson working in farm and garden supply centers will need to be able to sell these items. Among the more common items sold are the following:

a. Hand and power tools such as hammers, saws, electric drills, carpenters' squares, braces, levels and planes

b. Bolts, screws, nails, and builders' hardware

c. Glass

d. Screening

e. Smooth barbed, and woven wire field and poultry fencing

f. Snow fencing

g. Electric fencing

h. Rope, chain, block and tackle

i. Tarpaulins and polyethylene sheeting

j. Wood preservatives

k. Wood and aluminum ladders

l. Replacement wheels

m. Plumbing supplies

n. Electrical supplies

o. Wood or metal paints, enamels, varnishes, lacquers, or primers

p. Roofing materials

6. Small equipment

This term is generally used to describe small horsepower gasoline engine equipped, wheeled implements used in farm, lawn, and garden work such as garden tractors, steam cleaners, rototillers, lawn mowers, brush cutters, power sprayers, and small centrifugal pumps. However, included in this category for sales purposes, are hand powered lawn mowers, seeders, fertilizer spreaders, wheel cultivators, and sprayers. Also included for sales purposes are small, power operated, hand tools such as hedge trimmers, sidewalk edgers, lawn sweepers, and chain saws. Stationery equipment sometimes included in the small equipment category are compost mills, power grinders, and air compressors.

The sales of small equipment in an agricultural supply or garden center are usually seasonal. A sizeable volume of sales is usually possible in such stores where the sales and service of small equipment is organized as a separate department stressing service and acceptance of "trade ins" as standard policy. When grouped as a separate department, a specialized salesperson with a greater knowledge of capabilities and "product knowledge" is highly desirable. Such salespersons may be taken from other departments during a slack time if they have the "feel" for this type of work and can demonstrate competence as well as "talk about" merchandise being handled.

7. Tires, batteries, oils, and accessories.

The product knowledge needed for these items which are usually stocked in a farm supply center as well as made available through route salesmen is fully covered in Module No. 11 of this course on Petroleum and Petroleum Products, Sales and Service. The entire module need not be covered to train retail salespersons where such accessories are likely to be of secondary importance, but competencies IV, V, and VII are applicable. The subject matter of these competencies is arranged so that the minimum product knowledge needed by a retail salesperson is presented first under each heading.

8. Lumber

Some farm supply centers handle a complete line of lumber usually separated from the main business in about the same manner as petroleum. Others may stock only a few items such as treated poles and timbers for pole barn

construction. The retail lumber business is highly competitive and most farm supply businesses do not willingly embark on it.

9. Builders' supply materials

Many items, such as steel sashes, windows, and doors are carried in farm supply centers with the hardware line but it is rare to find one that provides bricks, concrete blocks, cement, aggregate or ready mixed concrete.

10. Pet supplies and equipment

The large number of suburban residents who own pets of all kinds such as birds, rabbits, quinea pigs, tropical fish, cats, and dogs have created a market for many accessory items with sizeable "mark ups." Such items include feeds, cages, beds, blankets, grooming tools, deodorants, feeders, waterers, leashes, muzzles, and medicines for parasite control. Practically all garden centers handle pet supplies. An increasing number of farm supply stores also stock them. The salesperson working in centers handling such lines will need to have considerable product knowledge about these items if he is to be successful.

11. Outdoor living equipment

Increased interest in outdoor living both at home and in nearby park or recreation areas has caused many garden centers and farm supply centers to stock such items as lawn furniture, grills, patio paving blocks, swimming pools, outdoor lighting, insect repellants, swings, sand boxes, boats and outboard motors. Many stores feature these with garden displays in the spring and summer seasons. Special displays are often built and every effort is made to catch the "impulse" buyer. As with all seasonal merchandise, the profit to the store is high if the stocks are moved before the end of the usual buying period.

12. Athletic and sports equipment

Not all farm supply stores or garden centers carry a complete line of sports equipment but an increasing number stock some of these items. Firearms, shotgun shells, simple fishing equipment, and bicycles are frequently found but it is not unusual in suburban areas to find such items as ski equipment also being sold.

13. Other miscellaneous items

There will be other items of local importance which have not been covered in this module. The teacher should help students develop a sound product knowledge about such items. This knowledge should be broad enough to help the student answer common questions which customers ask.

Suggested Teaching-Learning Activities

1. Take the class on a field trip to a large general farm or garden agricultural supply center to become acquainted with the diversity and quantity of "miscellaneous" supplies and equipment handled.

2. Have on display a wide variety of sales catalogs and product specification sheets to create interest when introducing the competency.

3. Have each student develop a "product knowledge" notebook made up of representative manufacturers' specification sheets and sales brochures pertaining to each category of miscellaneous supplies or equipment of local importance. These notebooks should be used to identify key factors or features which a student needs to know to help him make a sale. Instruction in this module should be based upon the type of activity listed above so that the student gains a working knowledge of the products he may eventually sell.

4. Much of the product knowledge of miscellaneous agricultural supplies can be developed through class discussion. Special reports by interested students will be appropriate. These should be short and answer specific questions raised by the class.

5. Role playing following class discussion will be a good way to make sure the class members understand the advantages of different forms of a product. The teacher can use several kinds of fencing which one student would try to sell to a student customer.

6. Miscellaneous agricultural supplies offer unusual opportunities for students to develop their abilities in building floor and window displays. After the principles of merchandise display have been considered in the classroom and a field trip taken to see several different types of displays, arrangements may be made with cooperating merchants to have small groups of students build displays on their own.

Suggested Time Allotment for this Competency

Class instruction	3	hours
Laboratory	2	hours
Total	5	hours

Suggested Instructional Materials and References

Instructional materials

Catalogs, brochures, and trade magazines available from the major manufacturers of the different products.

References

T 1. Logan, William and Moon, Helen M. Facts about Merchandise, pp. 173-198.

T 2. Robinson, O.; Blackler, W. L.; Logan, William B. Store Salesmanship, pp. 235-250.

T 3. Displays Made Easy. Material Laboratory, Distributive Education Service, Ohio State University, Columbus, Ohio.

TS 4. Catalogs, brochures and trade magazines available through major manufacturers of different products.

TS 5. State publications available from the Distributive Education Service or other vocational divisions.

*The symbol T (teacher) or S (student) denotes those references designed especially for the teacher or for the student.

Suggested Occupational Experience

1. Employment in a farm supply store preferably as a sales person, stock boy, or in building merchandise displays.

2. Work as a helper in a farm supply store.

3. Work in a school practice store using borrowed merchandise when necessary if it is impossible to gain experience in an actual store operation.

II. To know specific characteristics of selected miscellaneous small equipment and supplies useful to a salesperson

Teacher Preparation

Subject Matter Content

The teacher will have to decide which specific pieces of equipment or types of supplies he needs to emphasize when teaching this module based on his knowledge of their importance in the community. This is true because the importance of some of these items will vary from locality to locality and the student who sells or services these "miscellaneous" items needs to know something of their use, sales and service features, advantages, and disadvantages.

The teacher also has a responsibility for preparing students who are aware of the need for differentiating to their customers the differences in quality of items sold. It is difficult to cover all of the sales points for all types of miscellaneous equipment and supplies because of the variety of types and the range of sizes available. Therefore, the following are examples of the choices which are available to the customer.

1. Dehorners

Heat dehorning irons may be used at any time of the year since the horn buttom or stub will slough off with no loss of blood and without creating an open wound. Consequently, chances of disease and screw worm infection are reduced. Electric dehorners may be used to about four months of age. The customer should buy an electric dehorner of at least 250 watt capacity if he wants the surest results. The head on dehorning irons heated in a branding fire should be large to hold the heat and should have smoothly curved edges or caps on the dehorning end.

Dehorning paste may be used on unattached horn buttons on young calves up to ten days in age if it is applied after scrapping the horn button. However, dehorning paste should not be used if the animal's hair is wet or if there is chance of rain falling within a few hours after application.

Tube calf dehorners may be used for removing horns on small calves up to about four months of age. Barnes type dehorners work well on young stock up to ten months or a year in age as long as a ring of skin about 1/8" below the hair line is removed at the base of the horn. Blade or shear dehorners and saws are used on older animals.

2. Castrating equipment

Advantages of bloodless castration can be cited by the salesperson to the customer for elastrators and Burdizzo emasculatomes. Crushing of blood vessels prior to cutting, reducing blood loss is an advantage of using an emasculator over a knife that the salesperson should know. Highly polished chrome plated emasculators are also easy to clean or sterilize. All-metal castrating knives are easy to immerse and sterilize and will not be damaged as are other knives.

3. Animal health products

The students will need to know which types of products need to be kept refrigerated and which type can be kept on open shelves. He will need to know which products have expiration dates which limit their use and he should be instructed to bring such information to the attention of the customer. He will need to know which types of medications are slow-acting and which types are fast-acting.

4. Veterinary supplies

The prospective salesperson will need to know which types of plastic syringes are reusable and sterilizable and which types are disposable. He should know the gauge of syringe needles to use on different classes of stock. He should know which size of balling gun is used with horses, cattle, swine, or sheep. He should know the difference between hypodermic syringes and dose syringes. He should be able to demonstrate or tell customers how to sterilize veterinary equipment. He may need to explain why some pinkeye remedies work on one occasion but not on another occasion.

5. Large animal supplies

In some areas, it may be important for the salesperson to know the size of horn weights to recommend to customers. Calves up to six months of age use $\frac{1}{2}$ pound weights; six month old to year old animals use 1 to $1\frac{1}{2}$ pound weights. Animals over a year old should have at least 2 pound weights.

In some areas the salesperson should know whether or not a particular saddle sold has been built so that it can be used for roping. It may be necessary to know the difference between horse bits and pony bits. In some

areas, it may be necessary to know about types and sizes of horseshoes and horseshoe nails.

The salesperson may need to be able to explain how to use mastitis test kits or the advantages of using trace-element mineral salt over sulfur or plain salt. He may need to justify the difference in price between commercially manufactured calf or lamb creep feeders and homemade feeders. He also should know why it is recommended that customers buy canvas slappers for driving cattle rather than using stock whips.

6. Field and poultry fencing

Field fence comes in 20 or 40 rod rolls while poultry fence is available in 10 rod rolls. It is handled in farm supply stores and is often handled by elevators and builders' supply firms which ordinarily do not carry a complete line of hardware. Ornamental fencing and chain link fence may also be handled along with field fencing.

The instructor will need to teach students what constitutes a legal fence in his state. The old rule of being "horse high, pig tight, and bull strong" may not apply!

Fencing is made from low carbon steel wire containing some copper and coated with zinc to prolong its life.

Woven fencing is described in catalogs and on the label tag by a series of numbers which every salesperson should know how to interpret to prospective customers. Such a number might be 1047-6-9. These numbers can be interpreted as follows:

a. 10 - There are 10 line wires.

b. 47 - The fencing is 47" high.

c. 6 - The stay wires are 6" apart.

d. 9 - The wire used is #9 gauge. When the top and bottom wires are of heavier gauge wire an additional number is used to indicate this.

The height of the fence, the number of line wires, the spacing of the stay wires and particularly the gauge of the wires would be considered by the customer in relation to (1) the type of animals he wishes to fence against, (2) the permanency desired, and (3) the initial cost.

"Poultry netting" differs from woven field fence since the former has 1", 1½" or 2" hexagonal spacing. It comes in heights varying from 12" to 72" and may be used for a variety of purposes such as cages for small animals, garden fencing, guards over window and door openings, and protection for poultry. Although much lighter in gauge and shorter in life when subjected to severe use, poultry netting is more expensive than field fencing. It is sold in rolls of 50, 100, and 150 feet rather than the usual 20 rod rolls in field fencing.

Many stores carry only "hinge joint" fence in stock while the "stiff stay" type has to be ordered. The salesperson should be familiar with the advantages and disadvantages of each type when advising customers. The hinge joint will bend or fold when an animal crosses it and if well stretched will spring back to a nearly normal position. The stiff stay is harder to bend under similar circumstances but must be straightened by hand if bent. The stiff stay fence will generally turn livestock better than the hinge joint type.

Barbed wire for use on top of woven wire or for range fencing comes in 80 rod rolls or spools. The farmer has to decide on:

a. Gauge of wire

b. Spacing between barbs

c. Number of points on barbs, i.e., two or four points

The heavier gauge wire with more barbs costs more but will last longer and will stand more stretching.

Imported wire fencing is generally available through the same outlets as fencing of domestic manufacturers. It contains less copper than American made wire and usually has poorer quality galvanizing. Although made to American specifications, much foreign-made fence apparently does not stand as much stretching or last as long as that of domestic manufactures; thus, the customer must weigh initial savings against length of life.

Aluminum is being used more often in fence manufacturing either as wire or as surface treatment in place of galvanizing. Although aluminum coating will last longer than ordinary galvanizing, its higher cost may limit its use.

Most farm supply stores carry steel posts and many also stock wooden posts. Steel posts are more expensive but have the advantage of being easier to install or to move when used for temporary fencing. Weighted cylindrical steel post drivers are usually carried for sale, rental, or loan to customers. Special anchors are available for end posts although most farmers prefer to set them in concrete. Several designs of steel fence posts with different methods of fastening the wire are available but the critical sales point is the weight per post as this has a direct bearing on its strength and length of life. Steel posts fail because they rust off at ground level. Light weight steel posts may last 15 to 20 years with the heavier weight lasting up to 30 years with good care. Wooden posts are available in many farm supply stores. They are cut from several varieties of trees according to the region of the country. The usual diameter of 3" or 3½" determines the cost of the standard line post of 7' to 7½' lengths. End posts are usually six or more inches in diameter at the small end and are priced by the width across the top for the standard length of nine feet.

Untreated soft woods such as pine or fir will not last longer than 10 to 15 years under most conditions but when treated with either creosol or "penta" (penta chlorophenol) will often last up to 30 years and will have the added advantage of being resistant to fires. Many farm supply centers carry wood preservatives for home treatment of fence posts. Students should know how to mix and apply these wood preservatives.

Gates may be made of several types of materials or combinations of materials. Solid wooden gates are rarely manufactured but wooden slats in combination with mild steel, galvanized sheet metal and aluminum are popular and cheaper than all metal construction. Today's farm gates are usually 14' to 16' in length in contrast with the 12' standard of former years because of the increased width of farm machinery. Next to the length and the cost of the gate, the customer is interested in the number and spacing of the "slats" or rails. The usual number is six, but cheaper gates may have four or five slats and are less satisfactory for all uses. A frequently overlooked sales point is the number of bolts or rivets used to fasten the slats to the uprights. Cheaper gates use only a minimum number of bolts and rivets which decrease the length of life and increase sagging.

Electric fence is a cheap and efficient way of turning livestock but may not be legal for line or roadside fences in some states. It is more satisfactory for cattle, horses, or hogs than for sheep since wool acts as an insulator. Almost any type of wire may be used to carry the current. Eighteen gauge smooth wire is cheapest and most generally used. Light weight barbed wire with sharp points is preferred by some farmers for electric fences. Special light weight steel posts may be used and there are many styles of insulators available for attaching the wire to either steel or wooden posts. The number of wires used depends on the type of livestock to be turned. One is sufficient for cattle and horses but at least two are necessary for calves. When hogs are to be fenced against, two strands may be sufficient but must be spaced closer to the ground. If cattle and hogs are in the same field, the minimum number of wires must be there.

Controllers, often called fence chargers, for electric fence are either battery operated or are power line transformer operated. The advantages of battery operated controllers is that they can be used anywhere on the farm or ranch while the 115 volt type must either be located near power source or have a special insulated wire run out from the power source to the field where it is to be used. Either style is safe when properly manufactured and installed. Only those bearing Underwriters Laboratory approval are authorized for sale in most states. The battery type is cheaper for initial cost but the replacement of batteries probably makes total operating costs about equal. All safe electrical fence installations operate without current running continously in the wire. The controllers or regulators break the current after a fraction of a second of contact so that there is no danger of electrocution. The animal completes the circuit to the ground. Installations operating on 115 volt current with lamp bulbs as control devices are not safe, and the salesman should point this out to his customers. Some states still require that electric fences have markers placed at intervals to warn people of possible danger. However, the possibility for a human fatality when electric fence is properly installed is practically nil.

The safe electric fence shocks because of high voltage and low amperage delivered to the fence for only a short period of time in pulses to permit release of the person or animal before receiving a second shock.

The amount of current, time of flow, and the path of flow through the body determines the severity of a shock. In addition to electric fence wire and controllers, farm supply stores often carry a complete line of light weight steel posts and accessories for attaching the wire and making gates.

Electric fences are cheap to install and economical to operate, but have the major disadvantage of requiring frequent line repairs. Weeds causing a short circuit used to cause trouble until controllers where developed which would burn the weed tips and prevent this shorting. Such controllers allow the current to run for a longer period of time, burning the plant to remove the short circuit.

7. Agricultural hardware

The following are examples of the type of questions faced by sales personnel in this area. Construction differences which affect quality may be pointed out when selling hand or backpack sprayers and dusters. Students need to understand the differences in use and type of cut made between blade and anvil type shears. They should be able to recommend to customers, pruning saws to buy after considering the type and number of teeth (points) available in different saws.

Students should be able to point out the advantages of several season use that can be expected from plastic hot caps versus single season use of paper hot caps when selling the more expensive items. They should be able to tell the difference between high quality garden trowels and those of inferior quality. Students should be able to distinguish between silage forks, manure forks, and pitch forks. They should understand why pitch forks require longer handles when they sell replacement handles. They should know that manila rope is better than sisal rope for most purposes but they should also know the advantages of the new polypropylene ropes.

8. Roofing

Roofing carried by farm supply centers usually includes metal, either galvanized steel or aluminum, and asphalt materials, either in rolls or strips or shingles. Prices for all roofing is quoted per "square" or 100 square feet.

Metal sheets come in different lengths and are wide enough so that they will "lay" 24 inches when over-lapped. Steel

roofing is made of 28 gauge with quality and price determined by the amount of galvanizing. Aluminum roofing is lighter weight than steel and is available in sheets which will "lay" 48 inches. Aluminum roofing has a higher initial cost than steel and does not need painting as often, but is easily dented when used on the sides of buildings. Any metal roofing must be securely fastened with special roofing nails. Lead nails, for example, help to seal the hole made by the nail and prevent rain from leaking through. Care must be exercised where nails are driven to allow the water to drain away from the hole rather than into it. Nails should be placed on top of the corrugations, "V's" or "channel drains." The older style corrugated pattern depends on lapping to make it tight, while the newer "5V" or channel drain provides a trough for water which to drain which might blow under the edge or come over by capillary action.

Asphalt roofing is cheaper per square than metal roofing but will not last as long. The sheeting must be solid which is not necessary, although desirable for metal roofs. The price is determined by the kind of materials used with the weight per roll or bundle being an indication of the quality and probably length of life. A major advantage of asphalt roofing over metal is its suitability for placing on roofs with little pitch.

9. Garden tractors

These vary from fractional horsepower, walking types to multi-horsepower riding tractors capable of pulling heavy loads.

Most garden tractors can be bought with a line of attachments for plowing, discing, seeding, griding, mowing, and cultivating. Most manufacturers use V belts for drive whenever possible rather than chains or gears since they cost less and provide a "built-in" safety feature, i.e., they will slip when overloaded. Most riding types have several forward gears and a reverse gear. The larger riding types of tractors are equipped with battery-powered starters and lights.

In addition to working in gardens and mowing lawns, the larger tractors in this group can be used for snow removal; some can be equipped for loading manure, dirt, or gravel.

Customers usually decide which tractor to buy on the basis of money available, the amount of work to be done, and type of tractor needed. A fourth factor is "status";

this has become increasingly important. Many people buy higher priced units with more attachments than necessary merely because of appearance or because a neighbor has one. The wise salesperson soon learns which of these factors are most important to the customer and uses these factors to assist the customer in a sale.

"Trade-ins" are usually accepted by a dealer in garden tractors in order to increase sales volume. Many sales are based on the amount which the dealer can allow for the trade-in. Since the margin of profit on the higher priced models is larger, the trade-in allowance can be more liberal. This encourages the customer to "trade-up" to a higher priced model. However, the sales person must always keep in mind that trade-ins which cannot be sold for as much as was allowed, will result in lower profit. When this happens too often, the business and the salesman's salary may be adversely affected.

10. Lawn mowers

Regardless of whether attached to garden tractors or built for the single purpose of mowing lawns, there are three types of cutting mechanisms. Each of these have their own sales points. Each of these can be purchased either in hand operated, gasoline, or electric powered models.

The reel type is the oldest and is still preferred for close cutting and smooth work. The reel type mower is usually more expensive when compared to similar sizes of other types. They should not be operated at extremely high speeds. They are also more expensive to sharpen and maintain.

The rotary blade type may be a single blade directly attached to either an electric motor or gasoline engine. There are also multi-blade types with two, three, or possibly four blades either belt or gear driven from a gasoline engine. All rotary mowers have power-operated blades and many use the same power source to drive the power operated unit. However, the smaller sizes are usually pushed by the operator for forward travel. The single blade mowers do not exceed 21 inch cut. When widths of cut in excess of 21 inches are desired, more blades are added within the power limits of the tractor.

Rotary mowers are lower in initial costs and are cheaper to sharpen and maintain than other mowers. They are capable of cutting taller grass and can operate over

rougher ground. However, they will not cut as low as reel type mowers. There is always danger in any type of power operated lawn mower, but the rotary type, because of the high speed of the blade, may injure others besides the operator if the blade hits stones or metal. Although warnings are always placed on machines by manufacturers, the hidden blade of rotary mowers can cause serious accidents when people thoughtlessly or carelessly put their hands or feet under the housing while the blade is operating.

Cutter bar-type mowers will cut a heavy growth of grass and weeds as well as lawns. Some will cut low but will not do as smooth a job as a reel type or rotary type unless the cutter bar is kept in fine adjustment. All cutter bar type mowers tend to vibrate because of the reciprocating action by which they operate.

11. Rototillers

These machines, intended for preparing ground for cultivation, are usually of two types. One type is a walking tiller, though usually gasoline engine powered. The other type is an attachment for riding-type garden tractors. Rototillers are of value to most gardeners when the soil is not too hard and can be worked easily. The customer should be informed of the nature of soil structure problems that can develop from extensive use of these machines.

12. Brush cutters

These machines are of two types either of which may be equipped with a saw blade for felling brush or small trees. One type is pushed on two light weight wheels with the rotary blade driven by belt from a four-cycle gasoline engine. It is suitable for cutting brush on level land and along fence rows. The second type, often referred to as a "bushwhacker," is powered by a two-cycle gasoline engine which drives the blade through a flexible shaft with the entire machine suspended from the shoulder of the operator. Its advantage is that it can be used on very uneven ground and in places where a wheeled cutter cannot travel. Its initial cost is about one half that of the two wheeled type, but greater physical effort is required by the operator.

13. Snow blowers

These are available as separate machines or as attachments to garden tractors. They are usually more satisfactory than the "dozer" or blade attachment for removing snow. Being used only seasonally, it is especially important that they be stored properly after proper maintenance if they are to remain useful.

14. Chain saws and reciprocating power saws

Chain saws are powered either by small electric motors or two cycle gasoline engines. Electric powered saws have a lower initial cost and are preferred where electric current is available if they are of suitable capacity for the work to be done. Gasoline powered saws can be used wherever a man can walk and are available in various horsepower ratings depending upon the type of work. Different length bars and types of chains for difficult cutting purposes are available.

Reciprocating saws can be operated under sandy or wet conditions with less danger of damage to the blade than other types. Special blades for fine cutting are also available for these saws. Consequently, this type is finding favor among tree care specialists for pruning.

Suggested Teaching-Learning Activities

1. Have students read and analyze manufactures' catalogs, specification sheets, and advertisements. Ask them to discriminate between factually and impartially presented information and information slanted toward one particular product. Show them how much reliable up-to-date information may be obtained from manufacturers' publications.

2. Demonstrate some of the differences between high quality and poor quality equipment and supplies as well as differences in techniques or operating principles. For example:

   a. Demonstrate the difference in characteristics between liquid and paste type dehorners.

   b. Demonstrate the difference in warm-up times between low-wattage and high-wattage electric dehorners.

   c. Demonstrate the difference between syringe needles in the number of times they may be used without resharpening.

d. Demonstrate the physical differences between wooden posts properly and poorly treated with preservatives.

e. Demonstrate differences in finish and workmanship which are reflected by different prices and which must be considered by the salesperson in his sales presentation.

3. Bring fence tags to class and have students interpret them.

Suggested Time Allotments for Competency

Class instruction	5	hours
Laboratory or field trip	2	hours
Total	7	hours

Suggested Instructional Materials

Instructional materials

Catalogs, brochures, and trade magazines available through major manufacturers of agricultural supplies and equipment.

Suggested Occupational Experience

1. Employment in a farm supply store, preferably as a salesperson or stock boy.

2. Work as a helper in a farm supply store.

3. Work in a school practice store using borrowed merchandise when necessary if it is impossible to gain experience in an actual store operation.

III. To know what services can be provided pertaining to miscellaneous supplies and small equipment handled by an agricultural supply business

Teacher Preparation

Subject Matter Content

A labor-saving device such as a power lawn mower is of no value when it will not start or will not cut grass properly. The same is true of an electric iron which will not heat or a percolator

which will not "perc." When a farm supply store cannot refer the customer to a reliable person who can provide service at a reasonable cost, it must provide the service in order to get the business. In today's competitive market, it is not enough to sell an item and then refer the customer to a competitor to have it serviced. Future purchases by the customer will be made where the item can be purchased and serviced at the same place of business. This practice has given rise to the policy of "we service what we sell."

It is difficult for service operations to make money. Many firms are happy to break even on this aspect of the business. Sales of merchandise are the major sources of income. Parts, with a 30% or more mark up, will usually provide a small profit above the handling costs. Most store managers prefer to sell parts to outside servicemen rather than do the work and depend on the service charge to pay skilled labor. If the parts are small, the customer expects installation to be gratis. If repairs are extensive, they wonder about the large labor charge.

Small businesses which cannot justify a full-time serviceman, either have to send their service work out or have someone available who can do other types of work when not busy with repair work. Sales and service are sometimes handled by one individual but it is rare for a really good repair man to also be a top flight salesman and vise versa. More often the repair man also handles the deliveries, assembling machines, or equipment rather than major sales work. A good repairman commands high enough wages so that the store cannot afford to use him for other types of work. As a result, individuals now seeking employment will find most jobs more specialized than in earlier years.

A good serviceman in a farm supply store must be capable of doing a variety of repairs. These may range from simple adjustment or replacing of parts to major overhauls. Sharpening and reconditioning "trade-ins" is a major function of a repairman. The volume of this work is a prime factor for full employment since much of this store work can be performed when the repairman is not engaged with a customer's repair job.

Vocational agriculture graduates frequently become excellent service repairmen. Those who do not feel comfortable in sales work or do not want to prepare for farm machinery service occupations, could well begin preparing for employment in service work while enrolled in off-farm agricultural occupations. Module No. 12 of the course in Agricultural Machinery--Service Occupations entitled "Adjustment, Maintenance, and Repair of Small Gasoline Engines" may well be included in the farm supply course where a number of the students prefer service to saleswork.

The teacher will have to decide when the individual abilities and employment possibilities of his students warrant curtailing some of the modules in the agricultural supply course in order to incorporate modules from the Farm Machinery Service Occupations course which will be valuable in preparing servicemen for farm supply stores.

1. No. 2 - Agricultural Machinery Service Department Operating Procedures
2. No. 6 - Metal Fusion and Fabrication Welding
3. No. 8 - Mechanical Power Transfer Systems
4. No. 12 - Adjustment, Maintenance, and Repair of Small Gasoline Engines

When the farm machinery course in service occupations is offered in the same high school as one in agricultural supply--sales and service, it may be possible for students interested in the service aspects to be integrated into farm machinery classes when appropriate modules are being taught.

The farm machinery teacher might handle some modules for the agricultural supply class while the agricultural supply teacher teaches one or more of the common modules to the farm machinery class.

Suggested Teaching-Learning Activities

1. Develop with the class a list of the various types of service activities performed by the farm supply centers in the local community which are pertinent to the miscellaneous items covered in previous modules. Indicate whether these are handled by specially trained personnel or by employees who have other duties. Ask the students to appraise the facilities and competence of local farm supply store personnel for providing service on miscellaneous supplies.
2. Invite a farm store manager with a specialized service department to visit the class as a resource person.
3. Have the students gain experience by making out service orders, figuring parts, and making labor estimates on case situations. Use actual service forms or "tickets" secured from local business firms or adapt those suggested in Module No. 2 of the farm machinery course on Service Department Operating Procedures.

4. Have the students practice salesman-customer relations by using role-playing techniques.

5. Demonstrate both in front of the class and by simulated telephone conversation, the proper way to take care of a complaint on previous service which has not been satisfactory. Follow the "store policy" for such circumstances if one can be secured from one or more local farm supply stores. Teach the students to find out what is expected of them in this respect when they go on the job.

6. Be alert to opportunities for teaching service techniques when supervising students during their supervised occupational work experience.

7. The suggested time allotment for this competency is:

Class instruction	4 hours
Laboratory	4 hours
Total	8 hours

Suggested Instructional Materials and References

Instructional materials

1. Service work order forms and job tickets secured from local business firms or mimeographed for student use

2. Telephone kit and tape recorder for role playing

References

None, other than those listed for other modules, especially the ones indicated from the Farm Machinery course.

Suggested Occupational Work Experience

1. Supervised occupational experience in farm supply stores having a well developed service department is the best possible training situation for developing this competency. This may have to be in a helper capacity at first depending on individual ability and experience.

2. Work in or around the service department of a farm supply store will permit observation and sometimes involvement even though a student does not actually perform the work. Unpacking and assembling will be of more value then clerking for this competency.

3. Experience in repair, adjusting, or overhauling household appliances, garden tractors, and power equipment will be of value regardless of whether it is performed at the store, school, or home.

Suggestions for Evaluating Educational Outcomes of the Module

The sales techniques for miscellaneous supplies are generally similar to those presented in other modules so that "product knowledge" is the main objective of Competency No. II and can be tested by either written or oral examination if desired.

The student choice as to whether his place in the agricultural supply business is primarily in the sales field or the service field is more important than the acquisition of product knowledge or the development of service skills through the teaching of this module. If a student can make a positive decision by the time he completes the course in high school, other considerations are probably of lesser importance.

It is believed that the appraisals of cooperator-employers, and individual students should be incorporated with the instructors' evaluations using the following check list:

	HIGHLY COMPETENT	COMPETENT	NEEDS FURTHER TRAINING	NOT PART OF HIS DUTIES
1. To what degree does the student know the different kinds of miscellaneous supplies?				
2. To what degree does the student possess the "product knowledge" to intelligently answer inquiries pertaining to miscellaneous supplies?				
3. Can the student properly handle situations beyond his product knowledge by referral to superiors or the service department?				

	HIGHLY COMPETENT	COMPETENT	NEEDS FURTHER TRAINING	NOT PART OF HIS DUTIES
4. Does the student know the store policy with respect to service and can he handle properly a complaint because of poor service?				
5. Can the student properly fill out a service order including entries for parts and labor?				
6. To what degree is the student competent to perform service activities as follows:				
a. Replacing electrical cords, replacing fuses, tubes, etc.				
b. Cutting and replacing broken glass				
c. Assembling merchandise received "knocked down"				
d. Checking rental tools in and out				
e. Sharpening rental or customer tools				
f. Testing and replacing plugs, points, and condensors on small gasoline engines				
g. Testing for compression and grinding valves, if necessary, on small gasoline engines.				
h. Testing electric motors for shorts				
i. Disassembling and cleaning electrical motors				
j. Completely overhaul small gasoline engine				

	HIGHER COMPETENT	COMPETENT	NEEDS FURTHER TRAINING	NOT PART OF HIS DUTIES
k. Sharpen and adjust or replace teeth on chain saws				
l. Use a paint sprayer and keep track of small parts in the service center				
m. Order, unpack, and keep track of small parts in the service center				
n. Keep tools in order to do the usual housekeeping in the shop properly				
o. Others				

Source of Suggested Instructional Materials and References

Instructional materials

1. Catalogs, house, and trade magazines available through major manufacturers of the different products.

2. Service work order forms, may be secured from local business firms or mimeographed for students use.

3. Telephone kit and tape recorder for role playing

References

1. Hoover, Norman K. Handbook or Agricultural Occupations: The Interstate Printers and Publishers, Inc., Danville, Illinois, 1963. Price: $4.75.

2. Logan, William and Moon, Helen M. Facts about Merchandise. Englewood Cliffs, New Jersey: Prentice Hall, 1962. Price: Price: $7.75.

3. Robinson, O. P.; Blackler, W. L.: Logan, W. B. Store Salesmanship. Englewood Cliffs, New Jersey: Prentice Hall, 1965. Price: $4.88.

4. Displays Made Easy. Columbus, Ohio: Material Laboratory, Distributive Education Service, Ohio State University. p. 66.

5. State publications usually available through the Distributive Educational Service.

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INSTRUCTOR NOTE: As soon as you have completed teaching each module, please record your reaction on this form and return to the above address.

1. Instructor's Name_____

2. Name of school_____State_____

3. Course outline used: _____Agriculture Supply--Sales and Service Occupations
_____Ornamental Horticulture--Service Occupations
_____Agricultural Machinery--Service Occupations

4. Name of module evaluated in this report_____

5. To what group (age and/or class description) was this material presented?____
_____

6. How many students:
a) Were enrolled in class (total) _____
b) Participated in studying this module _____
c) Participated in a related occupational work experience program while you taught this module _____

7. Actual time spent teaching module:

		Recommended time if you were to teach the module again:
_____hours	Classroom Instruction	_____hours
_____hours	Laboratory Experience	_____hours
_____hours	Occupational Experience (Average time for each student participating)	_____hours
_____hours	Total time	_____hours

(RESPOND TO THE FOLLOWING STATEMENTS WITH A CHECK (√) ALONG THE LINE TO INDICATE YOUR BEST ESTIMATE.)

	VERY APPROPRIATE	NOT APPROPRIATE
8. The suggested time allotments given with this module were:	
9. The suggestions for introducing this module were:	
10. The suggested competencies to be developed were:	
11. For your particular class situation, the level of subject matter content was:	
12. The Suggested Teaching-Learning Activities were:	
13. The Suggested Instructional Materials and References were:	
14. The Suggested Occupational Experiences were:	

(OVER)

15. Was the subject matter content sufficiently detailed to enable you to develop the desired degree of competency in the student? Yes_____No_____
Comments:

16. Was the subject matter content directly related to the type of occupational experience the student received? Yes_____No_____
Comments:

17. List any subject matter items which should be added or deleted:

18. List any additional instructional materials and references which you used or think appropriate:

19. List any additional Teaching-Learning Activities which you feel were particularly successful:

20. List any additional Occupational Work Experiences you used or feel appropriate:

21. What do you see as the major strength of this module?

22. What do you see as the major weakness of this module?

23. Other comments concerning this module:

_____ _____
(Date) (Instructor's Signature)

_____
(School Address)